

**LYNDON B. JOHNSON SPACE CENTER
HOUSTON, TEXAS**

**JUSTIFICATION FOR OTHER THAN FULL AND OPEN
COMPETITION**

Aircraft Maintenance and Modification Program

1. This document is a justification for other than full and open competition prepared by the NASA Lyndon B. Johnson Space Center (JSC).

Introduction

The Aircraft Maintenance and Modification Program (AMMP) Contract NNJ04JA83C, was awarded competitively to Computer Science Corporation (hereinafter CSC) to provide integrated aircraft maintenance services at Johnson Space Center (JSC), Dryden Flight Research Center (DFRC), and Langley Research Center (LaRC) on February 10, 2004, with performance commencing on March 1, 2004. The contract was awarded for a period of five years with the period of performance extending through February 28, 2009.

2. **The nature and/or description of the action being approved.**

This justification provides the rationale for contracting by other than full and open competition for the acquisition of integrated aircraft maintenance and modification support services from CSC at JSC, DFRC, and LaRC. Aircraft operations at these facilities support astronaut crew training and essential mission support critical to completion of the Space Station and retirement of the Space Shuttle. Support at these facilities is a key element in the transitioning activities targeted toward the initial implementation of the U.S. Space Exploration Policy as announced in the President's Vision for Space Exploration in 2004. An example of the modification support services provided by CSC is the Stratospheric Observatory for Infrared Astronomy (SOFIA). NASA is developing SOFIA as a world-class airborne observatory that will complement the Hubble, Spitzer, Herschel and James Webb space telescopes and major Earth-based telescopes. SOFIA features a German-built 100-inch (2.5 meter) diameter far-infrared telescope weighing 20 tons mounted in the rear fuselage of a highly modified Boeing 747SP aircraft. It is one of the premier space science programs of NASA's Science Mission Directorate. The modification includes a complex moveable door system that remains closed for aircraft takeoff and landing and opens in-flight prior to observation. The fuselage was specially modified to alter much of the aft pressurized passenger compartment to allow for the telescope to operate in the unpressurized atmosphere conditions while the aircraft is flying at 40,000 feet. Specialized instrumentation and crew stations were also installed.

The proposed contract will span the transition operations between the retirement of the Space Shuttle, completion of the International Space Station (ISS), and the start of the U.S. Space Exploration Policy. This timeframe will allow clarification of more exacting contract requirements for any future follow-on activities. The proposed procurement will also provide NASA the

opportunity to determine the complement of aircraft located at JSC, DFRC, and LaRC that's required to effectively support the U.S. Space Policy, including current and future training needs of the astronaut corps as well as support of the next-generation of spacecraft, and continuing needs of academia and governmental agencies.

3. Description of the supplies or services required, including an estimated value.

These integrated aircraft maintenance and modification support services includes program management; engineering; logistics; mechanical systems fabrication and installation; electrical and avionics systems fabrication and installation; life support including explosive component maintenance; aircraft painting and aircraft maintenance including routine and heavy inspections; aircraft flight line servicing; aircraft launch and recovery; and worldwide flight operations support for NASA-owned aircraft locations listed below:

- a. JSC, at Ellington Field, Texas
 - (1) JSC, at El Paso, Texas
 - (2) JSC, at Edwards Air Force Base (EDW), California
- b. Dryden Flight Research Center (DFRC), EDW, California
- c. Langley Research Center (LaRC), Virginia

The services support a diverse and unique aircraft fleet with many of the aircraft being one-of-a-kind aircraft that operate out of JSC, DFRC, LaRC, and temporary worldwide locations. The current fleet consists of 68 aircraft of 19 types, with 66 of the aircraft highly modified. The following is a list of the aircraft supported by this procurement: eight Gulfstream GII/GIII aircraft, thirty Northrop T-38 supersonic jet trainers, two Raytheon T-34B aircraft, five McDonnell-Douglas F-18 aircraft, one McDonnell-Douglas F-15, one Cessna 206, one Lancair Columbia 300, one Cirrus Design SR-22, one North American Rockwell OV-10A, one Bell UH-1H helicopter, three Boeing 747 aircraft, one Douglas C-9B, two General Dynamic WB-57-aircraft, one Douglas DC-8, two Lockheed ER-2 aircraft, four Beechcraft C-12/B200 aircraft, one Aero Spacelines SGT-337 Super Guppy, two Northrop Global Hawk unmanned aerial vehicles (UAV), and one General Atomics Aeronautical Systems Incorporated Ikhana UAV.

The specialized modifications to the aircraft standard configuration cause the maintenance and repair of the aircraft to be significantly different from similar aircraft in the commercial and government world. In addition, with the aircraft being used for NASA's specialized mission and being an aging aircraft, the scheduling and requirements for maintaining the aircraft varies considerably from the norm found in the commercial and government world. For example, the Shuttle Training Aircraft has the ability to fly like a commercial aircraft and then convert into an aircraft that simulates the descent and landing of the Shuttle. Thus this aircraft's maintenance differs greatly from the maintenance of a commercial Gulfstream II aircraft. While the T-38's are used by the Air Force and Navy and NASA; NASA's T-38N's avionics and escape systems differ dramatically from the Air Force and Navy systems. With a small and diverse fleet such as this, maintenance problems develop where there is no known technical data from either the Original Equipment Manufacturer or other government agencies. Therefore, in-house troubleshooting techniques are relied upon to quickly and safely return the aircraft to service. In summary, NASA's

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diverse fleet of aircraft is a key element needed to support NASA's strategic objectives for the future of human space flight and other NASA programs.

Estimated Value

The estimated value of this procurement is \$175,000,000.

Period of Performance

The period of performance consists of a 1-year base period and two 1-year options, starting on March 1, 2009, through February 29, 2012, if all options are exercised.

4. Statutory authority permitting other than full and open competition.

The statutory authority permitting other than full and open competition is 10 U.S.C. 2304(c)(1). As contemplated by the provisions of the Federal Acquisition Regulations (FAR) 6.302-1(b)(1)(ii), the supplies and services required are unique and are available from only one source, CSC.

5. A demonstration that the proposed contractor's unique qualifications or nature of the acquisition requires use of the authority cited.

The AMMP contract has been competitively awarded since at least the mid-1980's. In 1993, DynCorp Aerospace Operations was the successful offeror. In 1998, DynCorp Technical Services LLC, A CSC Company, was the successful offeror. A change of name agreement was executed on June 14, 2005 to Computer Science Corporation, Applied Technologies, LLC. Therefore, CSC or its predecessor has been the successful offeror since 1993. During subsequent competitive procurements in 1998 and in 2003, CSC or its predecessor has been the sole offeror. The contract has provided the same type of services since at least the mid-1980's.

While other contractors know some of the aircrafts, only CSC has the unique knowledge of all the aircrafts required to support the Space Shuttle and ISS Programs during the period when the Space Shuttle Program is ending and the transition to the new U.S. Space Exploration Policy is taking place. This knowledge cannot be replicated by another company without incurring significant duplicated costs and unacceptable delays in fulfilling the Agency's obligations to its International Partners by ensuring completion of the ISS. No other contractor can perform all of the highly specialized services without compromising safety, performance, and schedule during this transition period and as such, multiple contract awards are not feasible.

Safely executing complex flight operations using NASA's unique fleet requires specialized knowledge possessed only by CSC at this time. High level examples of these specialized knowledge requirements stem from the flight operations at JSC, DFRC, and LaRC, which are critical to the continued and uninterrupted support required during the remaining Space Shuttle flights and ISS assembly sequence. In addition, domestic and especially overseas high altitude flight operations on the WB-57 and ER-2 require an extreme level of management oversight due to the very nature of their high risk operation. These flights are accomplished with the aircrew using pressure suits similar to what the astronauts wear. This is an extremely risky flight environment. Servicing, repairing, and operating these aircraft in foreign countries present daunting challenges to

the maintenance contractor and its management. Delays in meeting very tight mission timeline goals, which are often coordinated with satellites, put the total mission success at risk. Meeting schedule commitments within allowable budgets requires insightful contractor management's orchestration of all related activities. Lack of management's familiarity with many of the critical subtleties in working with the aircraft's payload providers, other deployment team members, and maintenance idiosyncrasies that arise daily on these 40+ year old aircraft would present unacceptable risk to the program. The process of ferrying a Space Shuttle from California back to the Kennedy Space Center on the back of JSC's 747 is another example of a critical management challenge. Issues constantly arise during the process of preparing the aircraft for the mission, while flying enroute, and during the mating and de-mating process. Delays in the readiness for the 747 to perform this mission caused by contractor maintenance management unfamiliarity with the process would present a large cost and schedule risk to the Space Shuttle Program

Any disruption, including inability of the aircraft to perform their functions would impact the retirement of the Space Shuttle Program and completion of the ISS. A delay to the flight and assembly sequence would be unacceptable to NASA's mission. All flight operations, including maintenance and modification of the aircraft, are safety and life critical, and the safety risk to the Government associated with transitioning to a new contractor can not be accepted at this time due to the criticality of timing and support requirements. The current Space Shuttle schedule calls for at least 10 more missions through the end of FY 2010. The WB-57 program has multiple international deployments currently scheduled for each of the upcoming years.

Space flight support requires the operations, maintenance, and continuous upgrade of approximately 68 diverse and complex aircraft. These aircraft must be readied for instructor, astronaut, crew, academia, and other governmental organization activities on a very tight schedule and to exacting safety of flight standards. Any deviation to configuration can result in negative crew training and the inability of a mission to be performed in a timely and safe manner, which also make multiple contract awards impractical. The loss of knowledge and skills due to a contract transition could result in an unacceptable delay to Shuttle flights, ISS assembly sequence, and U.S. Policy design implemented in 2004, test, and evaluation.

6. Description of the efforts made to ensure that offers are solicited from as many potential sources as practical.

On July 15, 2008, a synopsis of the proposed sole source contract action was transmitted to the Government point of entry (GPE) and the NASA Acquisition Internet Service (NAIS), JSC, in accordance with the provisions of FAR Subpart 5.2. Four responses were received. Three of the responses were from companies capable of either supplying aircraft components, repairing aircraft components, or providing bacterial, mold, mildew, and algae elimination in aircraft cabins. While each of these three companies possesses some of the skills needed by the Government, none of them possess all of the capabilities required for successful performance. The subcontracting goals for this contract takes into account the abilities of these companies. The fourth response was received from the incumbent contractor, CSC, which is capable of supplying all of the services and supplies required by the Government under this procurement.

The Consolidated Contracting Initiative Home Page was reviewed on April 9, 2008. No postings were located that matched the proposed acquisition. The procurement was included in the Center's FY08 Acquisition Forecast.

7. Description of the market survey conducted, and the results.

In accordance with FAR Part 10, a market survey was accomplished using the following market research techniques:

- a. Review of NASA's Market Research web site.
- b. Review of Government and commercial data bases for relevant information, including the Dynamic Small Business Search Database.
- c. Review of Internet resources for relevant information.
- d. Contact with other knowledgeable people in government, including DFRC, LaRC, and GRC maintenance officers, and industry on current trends and the state of the industry standards and practices.
- e. Personal knowledge of the Chief, Aircraft Maintenance Branch, Aircraft Operations Division (AOD), JSC, in procuring services of this type.
- f. Publication of a synopsis forwarded to the GPE (FedBizOpps) on July 15, 2008, as well as on the NAIS on July 15, 2008. No proposals or requests have been received for copies of the solicitation as a result of those publications.

No candidate companies, other than the incumbent, were located which could provide an integrated multi-facet maintenance support organization on site at JSC, DFRC, and LaRC during the transition from Shuttle and ISS to the new U.S. Space Exploration Policy initiative.

8. Determination by the Contracting Officer that the anticipated cost to the Government will be fair and reasonable.

Upon approval of this justification, a Request for Proposal will be issued to CSC. The proposal will be evaluated and negotiated to obtain a fair and reasonable cost. Historical cost data, Defense Contract Audit Agency audit information, and certified cost or pricing data submitted by CSC will also be used to obtain a fair and reasonable cost.

9. Other facts supporting the use of other than full and open competition, including an estimate of the cost that would be duplicated and how the estimate was derived.

If the procurement were competed, it is estimated that the cost impact to the Government would be \$2,785,750, based upon CSC's actual costs for award fee period 9, ending August 31, 2008. This negative cost impact to the Government is derived from historical data regarding the loss of key management personnel during the transition to another contract. This loss is estimated to effect operations by decreasing organizational efficiency 15 percent over a 6-month transition period in addition to lost astronaut training flights. This inefficiency is caused by management's inability to correctly balance all the competing elements associated with executing an aircraft maintenance plan. Work areas that repair and certify parts for installation on an aircraft need to shift priorities as dictated by which aircraft are broken. This is a dynamic situation and requires close coordination

between management of these shops and management of the aircraft repair activity. As aircraft come back from flights with a problem, management may need to shift workers from doing more routine tasks to effecting repairs in order to meet the requirements for the next flight. If the aircraft is not ready when scheduled, NASA incurs costs in lost training opportunities. When these activities are not well managed, NASA expends unnecessary funds in overtime to 'catch up' on new problems or workers may sit idle waiting for a required part. Most of this uncertainty is outside the control of AOD, often from outside of the Directorate. Therefore, contractor management needs to closely manage all maintenance and modification related activities to minimize these unforeseen delays and their related costs. This cost impact includes projected duplicated costs from reeducation of management and other critical and specialized personnel in NASA's unique processes and procedures. These duplicative costs were derived in part from required specialized training, such as pressure suit maintenance, nondestructive testing and specialized wiring courses, that management routinely attend in order to perform their job. This temporary lapse in organizational efficiency will affect the readiness of aircraft platforms to support the Space Shuttle requirements. Additional and potentially more significant cost impacts would be delays in not having required aircraft for launch and/or ferrying the Space Shuttle to Kennedy Space Center following an off-site landing. This would be an unacceptable risk to the Shuttle Program.

Additionally, it is estimated that lost astronaut training flight opportunities in both T-38 and Shuttle Training Aircraft (STA) aircraft would total 5% for each type aircraft over the same 6-month period. This equates to \$367,500 and \$75,250 respectively. This estimate is based upon the projected flight hours using a rate of \$2,100/hr for the T-38 and \$4,300/hr for the STA.


10. Sources, if any, that expressed an interest in writing, in the acquisition.

DynCorp International (DI) expressed in writing an interest in this procurement. DI was contacted by the Contracting Officer Technical Representative who discussed the rationale for contracting on a sole source basis with CSC. The discussion also included the scope, content, duration, and uncertainty in future contract requirements that will become much more defined during this proposed short transitional contract period. DI has not expressed any further interest in this procurement nor did DI respond to the synopsis issued on July 15, 2008.

11. The actions, if any, the agency may take to remove or overcome any barriers to competition before any subsequent acquisition for the supplies or services required.

Upon completion of the transition operations between the retirement of the Space Shuttle, its support aircraft, and start-up of the new U.S. Space Exploration Policy initiative, a competitive procurement will be possible as it is anticipated that the statement of work developed for the follow-on contract will have no barriers to competition to remove or overcome. A further reassessment of the procurement of the required services will be possible once the Shuttle Program has been phased out. A pre-Procurement Strategy Meeting (PSM) at NASA HQ is planned to consider policies and strategies to increase competition in the follow-on contract including the results of market research regarding the potential separate competitions for maintenance, spare parts, and modifications.

Technical Officer: I certify that the supporting data presented in this justification are accurate and complete.


Richard N. Clark
Chief, Aircraft Operations Division

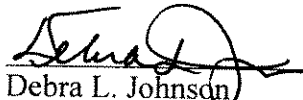
8-20-08
Date

Contracting Officer: I hereby determine that the anticipated cost to the Government will be fair and reasonable and certify that this justification is accurate and complete to the best of my knowledge and belief.


Alice Jean Pursell
Contracting Officer


5/2/08
Date

CONCURRENCE:


Debra L. Johnson
Procurement Officer

10/08/08
Date

CONCURRENCE:


Ellen Ochoa
Center Competition Advocate

10/10/08
Date

CONCURRENCE:


Michael L. Coats
Director

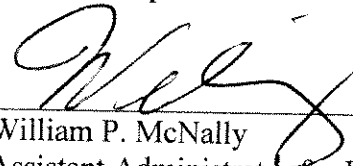
10/16/08
Date

CONCURRENCE:


Sheryl Goddard
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1/07/09
Date

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Date